

Observations on the Genus *Alcinous* Deyrolle (Coleoptera: Buprestidae)

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Abstract

Near Taree, New South Wales, both *Alcinous fossicollis* (Kerremans) and *A. nodosus* Kerremans were found to be restricted primarily to the Large-leaved, or Molucca bramble, *Rubus hillii* (Rosaceae) with one record of *A. nodosus* from the Green-leaved bramble or Bush lawyer, *R. moorei*. The two buprestid species were restricted to plants growing on or near forest edges and neither species was found on the introduced blackberry *Rubus vulgaris* in the area. *Alcinous* spp. were not observed on the native pinnate-leaved *R. rosifolius*. Little information has been recorded on the two species of *Alcinous* occurring in Australia but the genus appears to be specific to native *Rubus* species.

In a study of the phytophagous insect fauna associated with *Rubus* spp. in Victoria, Bruzese (1980) observed adult *Alcinous fossicollis* (Kerremans) on rare occasions on the leaves and canes of the endemic Small-leaf bramble, *Rubus parvifolius* L. The beetles were not found on introduced *Rubus* spp. even when these plants grew side by side with *R. parvifolius*. Bruzese considered this was reasonable evidence for host specificity.

This conclusion has been verified by observations made both in the spring and summer of 1980-81 and 1981-82 in a variety of habitats at Lansdowne, near Taree, New South Wales. In addition observations have been extended to a second species, *Alcinous nodosus* Kerremans (Fig. 1.).

Little information has been recorded on the Australian species of *Alcinous*. Except for references to *A. fossicollis* by Bruzese (1980) the biology and behaviour of *Alcinous* is otherwise unrecorded. Carter (1923) briefly notes that the genus is found in the coastal

"brush" (rainforest) areas of the east coast where it "chiefly occurs on *Acacia* foliage". His statement that *alcinous* is chiefly found on *Acacia* has not been substantiated and is considered by the present author to have been erroneous.

Native brambles and raspberries of the genus *Rubus* occur widely in Australia (Galbraith 1977) with the majority of species being restricted to the wetter forest types of the east coast from north Queensland to Victoria (Williams 1980). An examination of locality labels for *Alcinous* specimens in the Australian National Insect Collection, Canberra, the Australian Museum, Sydney, and a number of private collections indicate a sympatric distribution for both species from north Queensland to Victoria. On the east coast both *A. fossicollis* and *A. nodosus* appear restricted to high rainfall areas and are well within the known distribution of native *Rubus* spp.

The Large-leaved, or Molucca bramble, *Rubus hillii* F. Muell. is found as far south as eastern Victoria (Bruzese

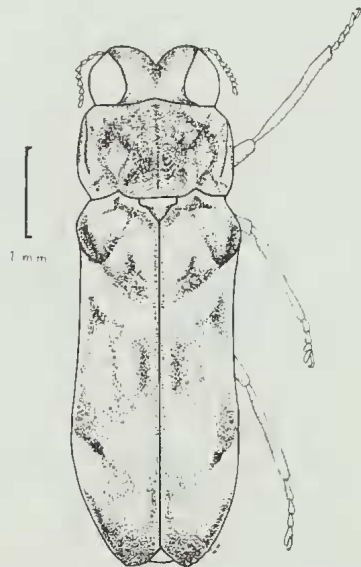


Fig. 1 *Alcinous nodosus*.

*Newby's Lane, Lansdowne via Taree, N.S.W. 2430.

1980). In the vicinity of Lansdowne it occurs locally on the edges of wet sclerophyll forest and more commonly gully rainforest where it quickly establishes in disturbed and regenerating areas. Less frequently the species is associated with clumps of lantana in lightly timbered pasture established on old wet forest sites.

The introduced Blackberry, *Rubus vulgaris* Weihe et Nees, also occurs in cleared areas adjacent to, or within, wet forest types and so may be found growing together with *R. hillii*. Neither *A. fossicollis* nor *A. nodosus* was observed on introduced *Rubus* or on *R. hillii* where this species was growing in pasture. The beetles were most commonly encountered during spring but a few isolated individuals could be found until late January.

Of some 30 *R. hillii* plants associated with wet forests at Lansdowne, fewer than 13 yielded beetles of either species at any one time, and fewer than five plants carried more than two individuals of either species. Progressively the adult beetles moved from plant to plant so that by the end of summer most had been attacked. No plants appeared to have been adversely affected by the beetles and both attacked and unattacked *R. hillii* exhibited comparably healthy growth by mid-autumn.

During the day *A. fossicollis* beetles (Fig. 3) were observed at rest along the main central leaf vein or at the base of the lamina and in such a situation small clumps of faeces were normally associated with them. The beetles moved out radially from this dorsal resting position to feed on the leaf surface where they caused characteristic pale blotches (Fig. 2). The beetles did not eat completely through the leaf but in most cases the remaining leaf tissue rotted away, leaving clusters of irregular holes 1-4 mm in diameter. The beetles generally were inactive on cloudy days, and at night moved to positions adjacent to the edges of the ventral leaf surface. Copulation took place on the dorsal leaf surface. I have been unable to attain any information on larval feeding.

The larger but less common *A. Nodosus* was found within the same



Fig. 2 Silhouette of *Rubus hillii* leaflets showing characteristic patterns of feeding blotches made by *Aleocharis fossicollis*.

range of habitats as *A. fossicollis*. Whereas *A. fossicollis* fed mostly within the central section of the leaf, *A. nodosus* fed only on the leaf margins where it left irregular excisions indistinguishable from those caused by a number of other insects. Copulation occurs on the leaf surface of *R. hillii* and the females deposit their eggs on the bramble canes. The larvae feed upon the pithy interior and pupate within the canes.



Fig. 3 *Aleocharis fossicollis* on *Rubus hillii*.

The apparent partitioning of feeding niches on the leaves of *R. hillii* possibly allows the two species to co-exist without competition. Although aggression was not observed between the two species, males of *A. fossicollis* grappled furiously upon meeting, in many cases falling from the leaf. Neither species showed a discernable preference for plants of a particular size but *A. fossicollis* was usually found on the younger leaves. Neither species was observed on flowers or fruits of *R. hillii*.

Two additional native brambles, the Rose-leaf bramble *R. rosifolius* Sm. and the Green-leaved bramble or Bush lawyer, *R. moorei* F. Mucll. were also regularly observed at Lansdowne. Only one adult of *A. nodosus*, feeding on the leaf edges of *R. moorei*, was observed. Both these *Rubus* spp. are associated with wet forests; *R. moorei* being known from Queensland and New South Wales and *R. rosifolius* from New South Wales and Victoria. Unlike the other *Rubus* spp. noted *R. rosifolius* dies back normally within 18 months of establishment on disturbed wet forest soils and has not been observed to form particularly woody canes.

Voucher specimens of *A. fossicollis* and *A. nodosus* have been lodged in the A.N.I.C., Canberra, and the Australian Museum, Sydney.

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The Derrinal Permian Glacial Valley

(Continued from page 36)

Another very interesting "erratic" found was a beautifully rounded and faceted clast about 25 cm. (10") diameter of Permian conglomerate + sandstone, and striated right across the join or boundary of the two. If we had found it embedded in situ in tillite, then we could have said it represented an "older Permian glacial deposit" becoming "an erratic" in a younger Permian tillite. This also suggests multiple glaciation.

Postscript. The author inspected this area on 26 Jan. 1983. He noted the lake level stood at 186.54 mm A.S.L. and was falling 2.5 cm per day. At this rate the level would fall below its record low recorded on 16 May 1978. He noted that very severe erosion had taken place at Frakes and Wilkinsons pavements and that the area is well worth a visit while so much is exposed.

Editor.